Claims 1-39 have been cancelled.

40. (Currently amended) A method of wireless connectivity comprising: receiving a broadcast beacon at a client;

the client deriving information from the beacon, the information allowing the client to identify all other clients in a multi-hop path from the client to a server[.]; further comprising the client;

storing every beacon received;

designating one path identified by one beacon as the optimal path; setting a default gateway as identified in the optimal path; and rebroadcasting only the beacon representing the optimal path.

- 41. (Previously Presented) The method of wireless connectivity of claim 40, wherein the information identifying the other clients comprises addresses of the other clients.
- 42. (Previously Presented) The method of wireless connectivity of claim 40, wherein beacons are originated and broadcast by the server, and are modified and broadcast by clients.
- 43. (Previously Presented) The method of wireless connectivity of claim 40, wherein the client receives a plurality of broadcast beacons, modifies at least one of the received beacons, and transmits the at least one modified beacon.
- 44. (Previously Presented) The method of wireless connectivity of claim 42, wherein modified beacons comprise addresses of clients in the path, and an address of the server.
- 45. (Cancelled) The method of claim 40, comprising:
 storing every beacon received;
 designating one path identified by one beacon as the optimal path;

setting a default gateway as identified in the optimal path; and rebroadcasting only the beacon representing the optimal path.

46. (Previously Presented) The method of claim 42, wherein the beacon broadcast by the server includes a hop-count set to an initial value, the method further comprising:

each client that receives the beacon broadcasting a modified beacon with the hopcount incremented by one;

such that each client receiving any beacon knows a path to reach the server and the number of hops in this path.

47. (Previously Presented) The method of claim 40 further comprising:

each client that receives the broadcast beacon rebroadcasting the beacon with an identifier of the client added to the beacon;

such that any client receiving any beacon has a complete path to the server.

- 48. (Previously Presented) The method of claim 47, wherein the identifier of the client is a client address.
- 49. (Currently amended) The method of claim 40, A method of wireless connectivity comprising:

receiving a broadcast beacon at a client;

the client deriving information from the beacon, the information allowing the client to identify all other clients in a multi-hop path from the client to a server; wherein the broadcast beacon includes a sequence number representing a current routing cycle.

50. (Previously Presented) The method of claim 49, further comprising upon a client receiving a beacon, determining if a beacon was previously received for this routing cycle; and

if no beacon was previously received for the routing cycle, storing a routing path to the server from the beacon.

51. (Previously Presented) The method of claim 49, further comprising, if the beacon was previously received for the routing cycle:

determining if this beacon has a higher sequence number than a prior beacon for this routing cycle, and if so,

storing the current beacon in memory.

52. (Previously Presented) The method of claim 49, further comprising,

upon a client receiving a beacon, determining if a currently received beacon represents an optimal path for this routing cycle; and

if the current beacon represents the optimal path, identifying a default gateway in the current beacon, and storing the default gateway.

- 53. (Previously Presented) The method of claim 44, further comprising: determining if there is a previous default gateway identified; and deleting the previous default gateway from memory.
- 54. (Currently amended) The method of claim 40, further comprising, for each client: collecting all a plurality of beacons; and selecting a single beacon to broadcast.
- 55. (Previously Presented) The method of claim 54, wherein selecting a beacon comprises:

identifying a number of hops between the server and the client for each beacon; and

selecting the beacon with the lowest number of hops.

56. (Previously Presented) The method of claim 54, wherein selecting a beacon comprises:

identifying a traffic monitoring code (TMC) for each of the beacons; and

selecting the beacon with the lowest TMC.

57. (Previously Presented) The method of claim 54, wherein selecting a beacon comprises:

identifying a beacon with a highest quality; and selecting the beacon with the highest quality.

- 58. (Previously Presented) The method of claim 57, wherein the highest quality is a best signal-to-noise ratio.
- 59. (Previously Presented) The method of claim 57, wherein the highest quality is based on most back end bandwidth capacity at the server.
- 60. (Previously Presented) The method of claim 57, wherein the highest quality is based on a lowest level of traffic being handled by the server.
- 61. (Previously Presented) The method of claim 57, wherein the highest quality is based on a reliability of the beacon.
- 62. (Previously Presented) The method of claim 61, wherein the reliability is determined by a number of times the beacon is received compared to a number of times the beacon was broadcast.
- 63. (Previously Presented) The method of claim 40, further comprising: sending a reverse beacon to the server; and constructing a client tree in the server, wherein the server has a path to all clients.
- 64. (Canceled)
- 65. (Cancel)

66. (Currently amended) A method of generating a routing path for a system including a server and a plurality of clients, the method comprising each client:

receiving a beacon from <u>one of the server or another client, wherein the beacon</u> includes a sequence number representing a current routing cycle;

the client deriving information from the beacon, the information allowing the client to identify all other clients in a multi-hop path from the client to a server;

rebroadcasting one beacon received from an upstream node; and broadcasting a reverse beacon upstream, the reverse beacon being addressed to the known upstream node, the reverse beacon used by the server and each client to set up a routing table.

- 67. (Previously Presented) The method of claim 66, wherein a routing table in a particular client includes a default gateway and a path to each client downstream from the particular client.
- 68. (Previously Presented) The method of claim 66, further comprising the server broadcasting a dummy reverse beacon to initiate the reverse beacon cycle.
- 69. (Previously Presented) The method of claim 66, further comprising each client aggregating the reverse beacons received from downstream clients, and sending a single reverse beacon including the aggregated information.
- 70. (Previously Presented) The method of claim 66, wherein receiving a reverse beacon broadcast by a client's default gateway triggers the client to start a timer to send the reverse beacon.
- 71. (Currently amended) The method of claim 66,
 further comprising, if a client receives multiple beacons:
 evaluating a link quality of each of the beacons received; and
 selecting the <u>a</u> default gateway based on the beacon with the best link quality and
 rebroadcasting that beacon.

- 72. (Previously Presented) The method of claim 71, wherein the link quality comprises reliability of the beacon.
- 73. (Previously Presented) The method of claim 71, wherein the link quality includes information about the back end bandwidth capacity of the server.
- 74. (Previously Presented) The method of claim 71, wherein the link quality includes information about the traffic being handled by the server.
- 75. (Previously Presented) The method of claim 66, wherein a connection between the server and the client is a wireless connection.
- 76. (Previously Presented) The method of claim 66, wherein a connection between the server and the client is chosen from among the following types of connections: a wireless connection, a wired connection, and a switched connection.
- 77. (Previously Presented) The method of claim 66,

further comprising the client:

receiving a plurality of beacons from a plurality of servers; and selecting one of the plurality of beacons, and setting the server associated with the selected beacon as its preferred server;

thereby self-selecting to belong in a cluster associated with the preferred server.

78. (Previously Presented) The method of claim 77, further comprising the client: moving outside the cluster;

upon receiving a beacon from a new cluster, the client setting the server associated with the new beacon and the new cluster as its preferred server.

79. (Previously Presented) The method of claim 78, further comprising:

expiring a routing table including a previous preferred server and previous default gateway.